



# **COMMONWEALTH of VIRGINIA**

## **DEPARTMENT OF ENVIRONMENTAL QUALITY TIDEWATER REGIONAL OFFICE**

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### **STATEMENT OF LEGAL AND FACTUAL BASIS**

Virginia Electric and Power Company  
Dominion – Elizabeth River CT Station  
2837 S Military Hwy,  
Chesapeake, VA  
**Permit No. TRO-61108**

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Dominion - Elizabeth River CT Station has applied for a Title V Operating Permit for its Chesapeake facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Engineer/Permit Contact:

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Laura D. Corl  
(757) 518-2178

Date:

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Air Permit Manager:

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Troy D. Breathwaite

Date:

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Regional Director:

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Maria R. Nold

Date:

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## **I. FACILITY INFORMATION**

### **Permittee Information**

Dominion Generation  
5000 Dominion Blvd.  
Glen Allen, VA 23060

### **Responsible Official**

Mr. David E. Snoddy  
Station Director  
2701 Vepco St.  
Chesapeake, VA 23323-6199

### **Acid Rain Designated Representative and CAIR Designated Representative**

Mr. Charles D. Holley.  
Vice President, Fossil & Hydro, System Ops  
USEPA ATS-AAR ID number: 2099

### **Facility ID**

Dominion – Elizabeth River CT Station  
2837 South Military Hwy,  
Chesapeake, VA 23323-0286

### **Facility Contact person**

D. Scott Morelen  
(757) 719-1134

**County-Plant Identification Number:** 51-550-00161

**ORIS Code:** 52087

**NATS Facility Identification Number:** 05208700CTZ1-CTZ3

**Facility Description: SIC Code:** 4911, **NAICS Code:** 221112

This facility is an electric generation facility using three simple cycle gas combustion turbines, and associated support equipment. The facility received a PSD permit, however, the units are being operated as low mass emissions (LME) units as defined in 40 CFR 72.2 (actual emissions below 50 tons NO<sub>x</sub> per control period, and 100 tons NO<sub>x</sub> and 25 tons of SO<sub>2</sub> per year). As specified in 40 CFR 75.19, the turbines use optional NO<sub>x</sub> emission estimation procedures in lieu of continuous NO<sub>x</sub> emissions monitoring systems to determine NO<sub>x</sub> emissions. The facility became subject to the Acid Rain program when it was purchased by Virginia Electric and Power Company (Dominion) on November 30, 2004.

The facility is a Title V and PSD major source for NO<sub>x</sub>, SO<sub>2</sub>, CO and H<sub>2</sub>SO<sub>4</sub>. This source is located in an attainment area for all pollutants. The original PSD permit was issued 3/5/1991; it has been amended three times; 11/28/2005, 6/13/2007, and 4/10/2008.

## **II. COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

### III. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emissions Unit Description	Rated Heat Input Capacity	Pollution Control Device (PCD)	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>						
CT-1	S1	Westinghouse W501DS simple cycle combustion turbine with water injection, inlet air fogging, and wet compression system - firing natural gas (primary)/ firing #2 fuel oil (secondary) 1991	1,553 mmBtu/hr (gas), 1,400 mmBtu/hr (oil)	Water Injection,	NO <sub>x</sub>	Issued 3/5/1991, amended 11/28/2005, 6/13/2007, and 4/10/2008
CT-2	S2	Westinghouse W501DS simple cycle combustion turbine with water injection, inlet air fogging, and wet compression system - firing natural gas (primary)/ firing #2 fuel oil (secondary) 1991	1,553 mmBtu/hr (gas), 1,400 mmBtu/hr (oil)	Water Injection,	NO <sub>x</sub>	Issued 3/5/1991, amended 11/28/2005, 6/13/2007, and 4/10/2008
CT-3	S3	Westinghouse W501DS simple cycle combustion turbine with water injection, inlet air fogging, and wet compression system - firing natural gas (primary)/ firing #2 fuel oil (secondary) 1991	1,553 mmBtu/hr (gas), 1,400 mmBtu/hr (oil)	Water Injection,	NO <sub>x</sub>	Issued 3/5/1991, amended 11/28/2005, 6/13/2007, and 4/10/2008

## IV. EMISSIONS INVENTORY

2010 Emissions from the Combustion Turbines are summarized in the following tables:

### *2010 Criteria Pollutant Actual Emissions*

Emission Units	Criteria Pollutants				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
CT-1	0.42	12.3	14.0	2.7	55.2
CT-2	0.44	13.7	13.1	2.8	59.0
CT-3	0.49	15.5	13.5	3.1	66.1
Facility Total	1.35	41.5	40.6	8.6	180.3

### *2010 Hazardous Air Pollutant Emissions*

Emission Units	Hazardous Air Pollutants		
	Formaldehyde	Lead	Sulfuric Acid Mist
CT-1	0.21	0.001	0.9
CT-2	0.23	0.001	0.8
CT-3	0.26	0.001	0.9
Facility Total	0.70	0.003	2.6

## V. EMISSION UNIT APPLICABLE REQUIREMENTS

### A. Limitations

#### 1. Combustion Turbines:

*The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:*

9 VAC 5 Chapter 50	New and Modified Stationary Sources, Part 1, Special Provisions
9 VAC 5 Chapter 50	Article 4: Standards of Performance for Stationary Sources
	Article 5: EPA Standards of Performance for New Stationary Sources
9 VAC 5 Chapter 80	Permits for Stationary Sources
	Article 1 - Federal Operating Permits
	Article 2 - Permit Program Fees
	Article 3 - Acid Rain
	Article 4 - Insignificant Activities
	Article 6 - Permits for New and Modified Sources
	Article 8 - Prevention of Significant Deterioration
9 VAC 5 Chapter 140	Part 1 - NO <sub>x</sub> Budget Trading Program
	Part 2 - NO <sub>x</sub> Annual Trading Program
	Part 3 - NO <sub>x</sub> Ozone Season Trading Program
	Part 4 - SO <sub>2</sub> Annual Trading Program

*The following federal regulations have been determined to be applicable:*

40 CFR Part 60 Subpart GG - National Emission Standards for Stationary Gas Turbines.

40 CFR Part 68 – Accidental Release Prevention

40 CFR Part 75 Section 75.19 - Optional SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> emissions calculation for low mass emissions (LME) units.

40 CFR Part 82 – Protection of Stratospheric Ozone

40 CFR Part 96 – NO<sub>x</sub> Budget Trading Program and CAIR NO<sub>x</sub> and SO<sub>2</sub> Trading Programs for State Implementation Plans

40 CFR Part 98 – Mandatory Greenhouse Gas Reporting

#### **Acid Rain -**

9 VAC 5 Chapter 80 - Article 3 - Acid Rain the following condition is included in the permit:

In accordance with the Air Pollution Control Law of Virginia §10.1-1308 and §10.1-1322, the Environmental Protection Agency (EPA) Final Full Approval of the Operating Permits Program (Titles IV and V) published in the Federal Register December 4, 2001, Volume 66, Number 233, Rules and Regulations, Pages 62961-62967 and effective November 30, 2001, and Title 40, the Code of Federal Regulations §§72.1 through 76.16, the Commonwealth of Virginia Department of Environmental Quality issues this permit pursuant to 9 VAC 5 Chapter 80, Article 3 of the Virginia Regulations for the Control and Abatement of Air Pollution (Federal Operating Permit Article 3). (9 VAC 5-80-490 B.2)

All three of these units have qualified for exemption from CEMS requirements as Low Mass Emission Units under 40 CFR §75.19.

The latest Acid Rain Permit application has been added to the Title V permit as Appendix A.

#### **CAIR -**

9 VAC 5 Chapter 140 - Parts 2-4: From EPA's Question and Answer memo:

Question 1. - The CAIR regulations refer to the CAIR permit as a "complete and separable portion of the Title V operating permit." What does this mean?

It means that the CAIR portion of the Title V permit must be a discrete "chapter" in the overall Title V permit See 40 CFR 96.120(b), 97.120(b), 96.220(b), 97.220(b), 96.320(b), and 97.320(b). To facilitate this requirement, EPA recommends that the permitting authority simply append the CAIR permit application (which references the CAIR standard requirements) to the Title V permit and include language stating that the provisions contained in the CAIR permit application are applicable requirements that are a binding and enforceable portion of the Title V permit.

As with permitting under the Acid Rain and NO<sub>x</sub> Budget Trading Programs, the CAIR permit is a portion of the Title V permit. As a consequence, the incorporation of CAIR requirements into the Title V permit should not modify any non-CAIR requirements already contained in the Title V permit.

Based on the above information, Section VIII has been added to the Title V permit and the CAIR application has been added an Appendix to the Title V permit.

### **CSAPR - Cross-State Air Pollution Control Rule**

The current affected CAIR units will be subject to the Cross-State Air Pollution Control Rule (CSAPR) (effective October 7, 2011) which replaces the Clean Air Interstate Rule (CAIR) on January 1, 2012. Virginia at this time will implement the CSAPR requirements through the federal implementation plan (FIP) as per Chapter 291 of the 2011 Virginia Acts of Assembly and 40 CFR 97.

Based on the above information, Section IX has been added to the Title V permit.

### **B. Monitoring**

#### **1. Combustion Turbines**

This facility is subject to 40 CFR Part 60, Subpart GG. The monitoring that is required to meet this subpart is sufficient to show compliance with the emission limits in the permit. The monitoring requirements include:

- the load rate of each turbine (Condition III.B.2);
- the water to fuel ratio of the water injection system (Condition III.C.1);
- the number of hours operated (III.Condition B.3);
- the nitrogen and sulfur content of the fuel (Condition III.C.2); and
- the opacity (Condition III.B.8).

Stack testing is also used as a monitoring tool. Stack test results from the February/March 2007 stack testing show the facility to be in compliance at loads above 85%:

	Unit 1	Unit 2	Allowable Limit
Natural Gas Fired			
NOx	22.29	24.21	25 ppm
CO	23.82	4.29	30 ppm
VOC	0.6	0.76	4 ppm
Oil Fired			
NOx	48.34	46.84	50.2 ppm
CO	3.76	2.05	30 ppm
VOC	0.82	0.89	4 ppm

According to these stack test results the facility is operating within their permit limits.

### **C. Recordkeeping**

#### **Combustion Turbines**

The permit includes requirements for maintaining records of all monitoring and testing. These records are listed in Section III.D.

### **D. Testing**

#### **Combustion Turbines**

Two of the combustion turbines are required to be stack tested each Title V permit term. The specifics of the testing requirements are listed in Section III.E of the permit.

### **E. Reporting**

#### **Combustion Turbines**

The permit includes requirements for recordkeeping. These records are listed in Section III.F.

## F. GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### 1. Comments on General Conditions

#### a. Condition B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-09”.

#### b. Condition F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### c. Condition J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1790. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

#### d. Condition U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

#### e. Condition Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

## VI. INAPPLICABLE REQUIREMENTS

Citation	Requirement Description	Why it Does not Apply
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40 CFR 63 Subpart T	National Emission Standards for Halogenated Solvent Cleaning	Dominion does not own or operate any equipment meeting the applicability criteria of this NESHAP subpart.
40 CFR 63 Subpart VV	National Emission Standards for Oil-Water Separators and Organic-Water Separators	This section is applicable only to facilities subject to other subparts that reference this subpart. Dominion is not subject to any subparts that reference this subpart.
9 VAC 5-70-10; 9 VAC 5-70-70	Applicability of, and Compliance with, Air Quality Standards; Nonattainment Areas	The Hampton Roads area has recently been re- designated an attainment area; therefore, despite its listing in Appendix K, the requirements do not apply.
40 CFR 63 Subpart YYYY	National Emission Standards for Stationary Combustion Turbines	These turbines are considered existing units and are specifically exempted in Section 63.6090(b)(4).
40 CFR 60 Subpart KKKK	Standards of Performance for Stationary Combustion Turbines	Only for stationary combustion turbines that commenced construction, modification or reconstruction after February 18, 2005.
40 CFR 64	Compliance Assurance Monitoring	Does not apply because there are no add on control devices.

## VII. INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emissions Unit No.	Emissions Unit Description	Citation <sup>1</sup> (9 VAC )	Pollutant Emitted (5-80-720 B)	Rated Capacity (5-80-720 C)
IC-1	Model P-185D air compressor, rated at 0.56 mmBtu/hr	5-80-720 B	NO <sub>x</sub> , PM, PM <sub>10</sub> , VOC, CO	84 HP
IL-1	Sandblaster	5-80-720 B	PM, PM <sub>10</sub>	n/a
IL-2	Fuel oil valves, pumps, flanges	5-80-720 B	VOC	n/a
IL-5	Turbine lube oil venting	5-80-720 B	VOC	n/a

<sup>1</sup>The citation criteria for insignificant activities are as follows:  
 9 VAC 5-80-720 B - Insignificant due to emission levels

## VIII. PUBLIC PARTICIPATION

The proposed permit will be place on public notice in the Virginia Pilot from November XX, 2011 to December XX, 2011.